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OTHONNA GYPSICOLA (COMPOSITAE) — A NEW SPECIES FROM NORTHERN SOUTH AUSTRALIA

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Abstract

The highly specialised species *Othonna gypsicola* is described as new and its relationship to the allied *O. gregorii* (F.Muell.)C. Jeffrey discussed. Illustrations are included.

Introduction

Record rains fell across the northern half of South Australia in the autumn of 1989. The desert was transformed; every low-lying area became a lake and between the lakes the ground was carpeted with vegetation. The author was fortunate to spend a week in the area in July of that year. Two days were spent on Copper Hills and Arckaringa Stations, an area of mesas and buttes in colourful breakaway country. The road between Copper Hills and Arckaringa passes close to large mounds of gypseous black clay, the gypsum is present as large slabs like shards of broken glass. No perennial plants grow on these mounds. The clay is deeply cracked and at least 100 mm of rain may be required to wet them properly, but a sparse scattering of ephemeral plants covered the mounds: the grass *Sporobolus carolii, Embadium johnstonii* and *Zygophyllum* species together with a glaucous, and often purple-leaved *Senecio*-like plant with large yellow flowers. This was initially mistaken for *Othonna gregorii* (F. Muell.)C. Jeffrey (*Senecio gregorii* F. Muell.) an abundant species throughout the Lake Eyre region on red sandy soils, along creek lines and even on the gibber plains. The clay-mound species, however, grew only on the deeply cracked and eroded clay, was present in large populations and did not extend to any adjacent different soil type. Collections were made and hundreds of collections of *Othonna gregorii* examined in the State Herbarium of South Australia. Not one specimen similar to the clay-mound taxon was located. Examination showed that it differed in many respects from *O. gregorii*, and it did not closely approach any other species. Hence the Copper Hills — Arckaringa plants are here described as a new species.

Othonna gypsicola R. Bates, *sp. nov.*

ab *O. gregorio* involucello longiore globulariore, lobis expansis discorum et acheniis fuscatis falcatioribus papillis serialibus pellucidis pappoque barbellato differt.

Type: Gypseous clay mounds between Copper Hills and Arckaringa, South Australia, 8.vii.1989, *R. Bates 19171*; (holo.: AD; iso: K, MO, NSW, PERTH).

Glabrous, deep-rooted ephemerals, erect to 30 cm high, little branched. *Leaves* leathery, purplish or greenish, glaucous, obovate to obovate-oblanceolate, 1-4 × 0.8-2.2 cm, entire, sessile, obtuse to sub-acute, somewhat imbricate. *Inflorescence* single or paired, terminal; peduncles 3-10 cm long, with few leaves. *Involucre* large, globular, 2-4 cm diam., ecalyculate, of 5-10 segments, at least partly connate, margins smooth, membranous, apices acute, ciliate; receptacle convex. *Ray florets* 8-10; ligules 6-10, ca 3 × 1 cm, yellow, with 4-6 red nerves. *Disc florets* ca 50, tubular, 5 × 1 mm, 5-lobed; lobes ca 1 × 1 mm, spreading or recurved. *Styles* shortly bifid on ray florets, with 2 mm long lobes on disc florets; stigma a short bristle of fused papillae. *Anther* obtuse, deltoid, filaments largely fused. *Achenes* sub-cylindrical, falcate, 8 × 2 mm, dark brown, 10 ribbed, ribs covered with rows of pellucid papillae to 0.3 mm long; a persistent pappus of stout, barbellate, white bristles.

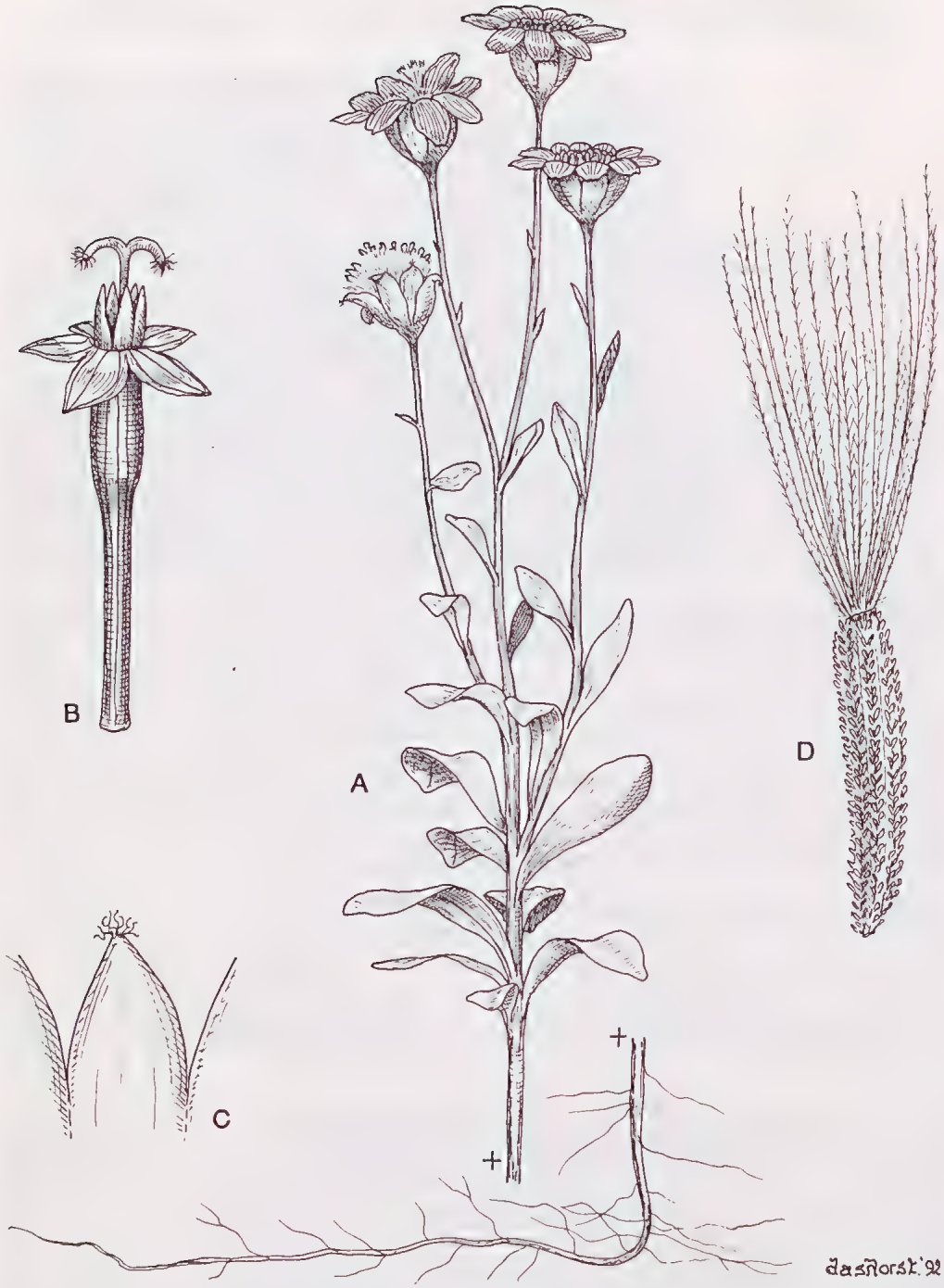

Fig. 1. *Othonna gypsicola.* A, whole plant ×½; B, disc floret ×10; C, apex of involucre segment showing cilia; D, single achene ×10. (From *R. Bates 19171,* holo.: AD).

Restricted to mounds of black gypseous clay with exposed gypsum shards, at the base of breakaways between Copper Hills and Arckaringa homesteads west of Oodnadatta, South Australia (LE). This area receives probably less than 150 mm mean annual rainfall of very erratic nature such that *O. gypsicola* may not germinate frequently and, judging from the lack of collections, perhaps only grows after exceptional falls of rain. *O. gypsicola* did not appear in 1990 (C. James, pers. comm.). Flowers appear 2-4 months after rain.

Othonna gypsicola differs from *O. gregorii* in branching above the ground, in the different position of the leaves, the larger more globular involucre with its fewer and less connate sepals with their fimbriate apices, the larger ligules, the spreading lobes of the disc florets, the longer style branches, the darker more distinctly falcate achenes with their distinctive rows of pellucid papillae and the coarser more distinctly barbellate pappus bristles. *O. gregorii* also occurs on Copper Creek Station where it is restricted to isolated plants along creek lines in sandy soil.

Leaves obovate to obovate-lanceolate, achenes with distinct rows of pellucid papillae ..... *O. gypsicola*
Leaves broad-linear, achenes densely pubescent ..... *O. gregorii*

Generic placement of Othonna gregorii and O. gypsicola

Othonna gregorii (F. Muell.)C. Jeffrey was until 1986 *Senecio gregorii* but had long been considered discordant in *Senecio* (Lawrence & Belcher 1986) on the basis of its glabrous, fleshy leaves, ecalyculate and largely connate involucre among other characters. However, *O. gregorii* and *O. gypsicola* could be considered discordant in *Othonna* which is a largely South African genus of shrubby or tuberous perennials with female sterile disc florets and undivided styles. It is, however, superficially very similar to the fleshy, glabrous leaved Australian, perennial, arid-land shrubs *Senecio magnificus* and *S. megaglossus* which also have a largely ecalyculate involucre.

Etymology: gypsicola, gypsum loving, in reference to the specialised habitat.

Conservation status: rare and not conserved but under no threat as it is not grazed.

Additional collection

SOUTH AUSTRALIA: gypseous clay mounds and clay wall of dam on Copper Hills and Arckaringa Station, 7.vii.1989, *R. Bates 19816* (AD).

References

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Lawrence, M.E. & Belcher, R.O. (1986). In: Jessop, J.P. & Toelken, H.R. (Eds) *Flora of South Australia* 3: 1591. (Govt Printer: Adelaide).